

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
7 October 2004 (07.10.2004)

PCT

(10) International Publication Number  
**WO 2004/085438 A2**

(51) International Patent Classification<sup>7</sup>: **C07D 487/00**

(74) Agent: GERVASI, Gemma; NOTARBARTOLO & GERVASI S.p.A., Corso di Porta Vittoria 9, I-20122 MILAN (IT).

(21) International Application Number:  
PCT/EP2004/050339

(22) International Filing Date: 22 March 2004 (22.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
MI2003A000573 24 March 2003 (24.03.2003) IT

(71) Applicant (for all designated States except US): NIKEM RESEARCH S.R.L. [IT/IT]; Via Zambelletti 25, I-20021 BARANZATE DI BOLLATE (IT).

(72) Inventors; and

(75) Inventors/Applicants (for US only): FARINA, Carlo [IT/IT]; c/o NIKEM RESEARCH S.R.L., Via Zambelletti 25, I-20021 BARANZATE DI BOLLATE (IT). GAGLIARDI, Stefania [IT/IT]; c/o NIKEM RESEARCH S.R.L., Via Zambelletti 25, I-20021 BARANZATE DI BOLLATE (IT). PARINI, Carlo [IT/IT]; c/o NIKEM RESEARCH S.R.L., Via Zambelletti 25, I-20021 BARANZATE DI BOLLATE (IT). MARTINELLI, Marisa [IT/IT]; c/o NIKEM RESEARCH S.R.L., Via Zambelletti 25, I-20021 BARANZATE DI BOLLATE (IT). GHELARDINI, Carla [IT/IT]; c/o Dipartimento di Farmacologia Preclinica e Clinica "M. Aiazzi Mancini" Università di Firenze, Viale G. Pieraccini 6, I-50139 FIRENZE (IT).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**

— of inventorship (Rule 4.17(iv)) for US only

**Published:**

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/085438 A2

(54) Title: COMPOUNDS WITH NOOTROPIC ACTION, THEIR PREPARATION, PHARMACEUTICAL COMPOSITIONS CONTAINING THEM, AND USE THEREOF

(57) Abstract: Described herein are new bicyclic arylimidazolones having nootropic action (i.e., protecting and stimulating cerebral functions), analgesic action and anti hyperalgesic action; also described is the process for their preparation and pharmaceutical compositions comprising them, useful for the treatment of cognitive deficits, and of various types of pain.